

### REMARKS

Applicant appreciates the Examiner's thorough examination of the present application as evidenced by the Office Action of April 1, 2003 (hereinafter "Office Action"). In response, Applicant has amended independent Claim 1 to clarify that the second, non-exposed, surface portion is disposed at the interface between the insulation layer and the upper conductive layer.

Applicant respectfully submits that the cited references fail to disclose or suggest at least the recitations of independent Claim 1 as amended. Therefore, Applicant respectfully submits that all pending claims are in condition for allowance. Favorable reconsideration of all pending claims is respectfully requested for at least the reasons discussed hereafter.

#### **Claims 1 - 13 Satisfy the Requirements of 35 U.S.C. §112**

Claims 1 - 13 stand rejected under 35 U.S.C. §112, ¶1 as containing subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular, the Office Action states that the recitation "the first metal oxide layer and the second surface portion of the insulation layer do not overlap" in Claim 1 is not supported in the specification and/or drawings. (Office Action, pages 2 and 3). In response, Applicant has amended Claim 1 to clarify that the second, non-exposed surface portion is "at an interface with the upper conductive layer." As can be seen in **FIG. 2**, the metal oxide layer **200/200'** does not overlap the non-exposed surface of the dielectric layer **110** at the interface with the upper electrode **120**. Thus, Applicant respectfully submits that Claims 1 - 13 satisfy the requirements of 35 U.S.C. §112.

#### **Independent Claim 1 is Patentable**

Independent Claim 1 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Korean Patent Publication No. 2000-25706 (hereinafter "25706

Publication" in view of U. S. Patent No. 6,203,613 to Gates *et al.* (hereinafter "Gates").

Claim 1, as amended, recites:

forming an insulation layer that comprises oxygen between upper and lower conductive layers, the insulation layer having a first surface portion that is exposed by the upper and lower conductive layers and a second, non-exposed, surface portion at an interface with the upper conductive layer; and

exposing the insulation layer to a metal precursor that is reactive with oxygen so as to form a first metal oxide layer on the first surface portion of the insulation layer without forming the first metal oxide layer on the second surface portion of the insulation layer, such that the first metal oxide layer and the second surface portion of the insulation layer do not overlap. (Emphasis added).

The metal oxide **22** shown in the 25706 Publication has portions thereof disposed on an upper surface of the upper electrode **16**. In sharp contrast with at least the highlighted recitations of Claim 1, these portions of the metal oxide **22** on the upper surface of the upper electrode **16** overlap a non-exposed portion of the insulating layer **14** at an interface with the upper electrode **16**. Applicant further submits that Gates fails to provide the teachings missing from the 25706 Publication.

Accordingly, for at least the foregoing reasons, Applicant respectfully submits that independent Claim 1 is patentable over the 25706 Publication and Gates, and that dependent Claims 2 - 13 are patentable for at least the reason that they depend from an allowable claim.

### CONCLUSION

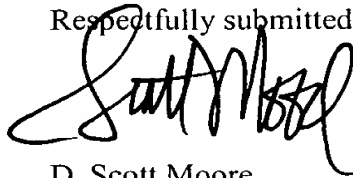
In light of the above amendments and remarks, Applicant respectfully submits that the above-entitled application is now in condition for allowance. Favorable reconsideration of this application, as amended, is respectfully requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (919) 854-1400.

It is not believed that an extension of time and/or additional fee(s), including

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fees for net addition of claims, are required, beyond those that may otherwise be provided for in documents accompanying this paper. In the event, however, that an extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned under 37 C.F.R. §1.136(a). Any additional fees believed to be due in connection with this paper may be charged to our Deposit Account No. 50-0220.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Mail Stop Non-Fee Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on June 30, 2003.



Traci A. Brown